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I. INTRODUCTION

1. The year 1993 was in many ways a new turning-point for the United Nations University (UNU). The University occupied its new permanent headquarters premises in Tokyo; its emerging new institutional profile brought heightened visibility and increased expectations from both the United Nations and the international scholarly community. The year began for the Council of UNU with its thirty-ninth session, which was held in conjunction with the inauguration ceremonies for the permanent headquarters building, in February 1993. The Secretary-General of the United Nations, Mr. Boutros Boutros-Ghali, and the Director-General of the United Nations Educational, Scientific and Cultural Organization (UNESCO), Mr. Federico Mayor, participated in the ceremonies and delivered keynote addresses. In his message at the opening ceremony, the Secretary-General stated:

> "The University must become a reservoir of ideas, a source of information and understanding which is available to the United Nations in its entirety. It is imperative that existing linkages should be strengthened and, more importantly, utilized. It is also imperative that new systems of communication should be developed with the various bodies of the United Nations system. In this way, United Nations efforts can draw upon the work of the University." 1/

2. At its fortieth session, in December 1993, the Council deliberated a number of issues relating to the continuing academic and institutional development of the University. Chief among these was the concern expressed by the Council for increased consolidation and strengthening of the overall coherence of the academic activities of the University, particularly as it moves beyond the Medium-Term Perspective for 1990-1995. The Council stressed that increased efforts should be made to integrate research, postgraduate training and dissemination and to further enhance interaction among the different research and training centres and programmes and associated and cooperating institutions within the networks of the University.

3. Recommendations by the working committees of the Council on programmatic, financial and statutory matters, as well as on the report of the Council for 1993, were considered and acted on. The main decision during the Council session was the adoption of a balanced budget of US$ 66.57 million and the academic programme for the biennium 1994-1995. See annex I for the Council's decision on the budget for the biennium 1994-1995.

4. Consideration was given to several proposals for new UNU academic initiatives. The Council reviewed and endorsed a feasibility study report on a proposed joint initiative with a consortium of universities in Canada for a research and training network devoted to the areas of water, environment and human health (INWEH), to be based in Ontario, Canada. The Council also discussed a proposal for a programme for the promotion of leadership, to be based in Jordan, and requested additional study on the matter, expressing its gratitude to the Government of Jordan for its offer to host the proposed initiative at Amman.

5. The Council took note of developments concerning the planned Institute of Advanced Studies to be located adjacent to the new headquarters building in Tokyo. The Institute is expected to become operational in mid-1995. Attention was also given to a progress report on the possible establishment in Catalonia, Spain, of a research and training centre on the study of governance. The

Council reviewed a draft strategy paper on the capacity-building activities of the University and asked that the paper be broadened to include an overall institutional strategy in which research and capacity-building are more fully integrated and which would take account of the need for consolidation of the academic efforts of the University, including dissemination. The Council also requested that consideration be given in the strategy paper to the criteria for selecting cooperating institutions. The Council emphasized that additional efforts needed to be undertaken to build up, strengthen and use centres of excellence in developing countries.

6. The Council endorsed the report of an advisory team on a long-term programme of activities to be undertaken by UNU under Agenda 21 2/ and indicated that the approach used by the University in preparing the programme provided a model for the type of strategic planning recommended by the Council for the University as a whole.

7. The Council approved a new statute on dissemination and endorsed a policy on scholarly publishing. It approved a new UNU policy on personnel relating to terms and conditions for personnel engaged under personnel service agreements, and also approved a provisional agenda for its next session, to be held in December 1994.

8. The Council also decided to undertake an internal assessment of work under the University's second Medium-Term Perspective with a view to the preparation of the third Perspective.

II. THE FOCAL POINT OF THE UNITED NATIONS UNIVERSITY: GLOBAL CHANGE AND GLOBAL RESPONSIBILITIES - AN OVERVIEW

9. Under the mandate of the University, its work focuses on research on pressing global problems that are exacerbated by constant change, change that can often bring new problems affecting humanity. Given the enormity of the problems, it also calls for academic approaches and activities structured differently from those of traditional universities, as well as new modalities of cooperation. Taking advantage of its unique position within the United Nations system, UNU has developed modalities that build on the cooperation of the international community of scholars to find collective solutions.

10. As a basic perspective from which to pursue its work, particularly during the decade of the 1990s, the University uses its second Medium-Term Perspective (1990-1995), entitled "Global Change and Global Responsibilities". This articulates how the University should carry out its mandate to address pressing global problems within five programme areas: universal human values and global responsibilities; new directions in the world economy; sustaining global life-support systems; advances in science and technology; and population dynamics and human welfare.

11. This annual report of the United Nations University for 1993 continues the approach and style of the 1992 report in attempting to focus attention on the work of the University at the level of issues to help the reader discern more clearly how its various components converge. Consequently, it does not present details of discrete research projects, but focuses instead on describing the perspectives, impacts and results achieved in order to construct a coherent picture of the knowledge developed out of UNU research. This way of looking at the work of UNU offers an opportunity to examine the overall coverage of the key issues the efforts of the University set out to address.

12. The report integrates into a whole the various academic initiatives undertaken in the international network of research and training centres and programmes that make up the University. It also emphasizes how dissemination and postgraduate training are being made integral elements of the research efforts of the University in order to reinforce their impact. The intention of the report is to present the "trees" that make up the parts of the programme of the University in such a way that the "forest" representing its totality will be perceived more easily. The account of activities is organized not according to the University's "units", the Academic Division at the University Centre, the research and training centres and programmes, associated institutions, and other networks, but rather under four themes, corresponding to the five programme areas mentioned above, as follows: peace and governance (universal human values and global responsibilities); the environment (sustaining global life-support systems); science and technology (advances in science and technology); and human and social development (new directions for the world economy and population dynamics and human welfare). The reporting on these four issues is by no means exhaustive, nor does it reflect the total breadth of the University's research, capacity-building and dissemination activities. What follows, therefore, is a description of some of the key outcomes and findings that contribute to the knowledge generated by UNU activity in 1993.

13. Building the report on these four themes helps in understanding the unique position of UNU, both as an academic institution (as an institution of higher learning, albeit a globally decentralized and specialized one) and as an

autonomous organ of the United Nations system. Placed upon the University, therefore, are two different and possibly conflicting sets of expectations. On the one hand, the University tries to understand the nature of the complex, interrelated changes affecting the human condition, which requires scholarly work of the highest quality, and on the other hand, it endeavours to address issues of global importance through a problem-solving approach so as to contribute to the efforts of the United Nations system in solving the problems affecting the human condition.

14. The four themes at the centre of the present report differ in their impact on the human condition. They cannot be seen at the same level or from the same perspective. For this reason, the presentations that follow reflect this heterogeneity through differences in style and approach that more appropriately match each theme.

15. The first theme relates to the concerns of peace and governance, focusing in particular on the role of the United Nations system and other multilateral efforts in the future. The theoretical and practical challenges arising from the growing interdependence among nations served as a basis for addressing the underlying causes that give rise to conflicts, violence and increasing threats to peace.

16. The second theme is concerned with coming to a better understanding of the natural environment, seen as an all-pervasive factor affecting the human condition, as well as the varied impacts human activity can have on the environment. The approach of UNU is aimed at helping to move towards some measure of balance between them in achieving environmentally sustainable development.

17. The third theme involves the seminal role of science and technology in the process of development and the socio-economic and other effects that can result from the increasing convergence of science and technology. The approach of UNU emphasizes an enhancement of self-reliance in crucial areas of science, particularly for developing countries.

18. The fourth theme is related to the socio-economic concerns that together help to form the basis for more equitable and sustainable development. UNU addresses these concerns through theoretical elaborations, policy criticism and proposals, and problem-solving formulations.

III. THE WORK OF THE UNIVERSITY: ISSUES AND CHALLENGES

A. Peace and governance

1. Governance and the United Nations system

19. Over the years, the University has been actively discerning the trends of geopolitical changes and reflecting on the emerging new world order from various perspectives. More recently, the attention of UNU has been focused on the globalization in international relations from the perspective of the increasing interdependence of nations and the role of the United Nations in managing such interdependence.

20. During the symposium held in conjunction with the opening ceremonies for the new headquarters building in February 1993, the Secretary-General of the United Nations and the Director-General of UNESCO expressed converging points of view on the need for rebuilding a United Nations for the twenty-first century. The Secretary-General opened the debate by saying:

> "Development never moved into the centre [of the United Nations]. Now, we realize that peace and development are indivisible. The Charter makes no distinction. Yet, while the United Nations Security Council has a key role in global security, the United Nations takes almost no part in global economic management."

The Director-General of UNESCO, on the same occasion, analysed the malfunctioning of the system in coping with the problems of development. He said:

> "At this turning-point in time, we must recognize all these past mistakes and hope that the emerging international development ideas take into account human education and training, and human resources".

At the same meeting, the Secretary-General laid down a broad framework for reflection and policy-oriented research, which has been published in 1993 in the final report of the symposium under the title The Role of the United Nations in the Twenty-first Century.

21. The outcomes of UNU research activities, scientific meetings and publications in 1993 represent initial contributions towards the advancement of an understanding of the complex issues concerning the gestation of a new world order. Within the programme on multilateralism and the United Nations system for instance, the systematic critique on the adverse impacts of the current trends in global economic policy from a social science perspective initiated in 1992 was further formulated. The occasion was an international symposium on the global political economy and a new multilateralism, held at Oslo in August 1993 and jointly organized by UNU, the Nordic Network on International Development Studies and the Nordic International Studies Association. At that meeting, scholars and policy makers extended their perceptions and reflections on the global economy beyond an economic outlook.

22. The impacts of market-oriented reforms and structural adjustments on social structures were examined by focusing on particular segments of the population, for instance, women, or on entire societies within specific regions of the world, such as Eastern Europe and Africa. These studies point to the conclusion that women and children are most adversely affected by structural adjustments

promoted by the international financial system, directly or through the collapse of the public sector, that is, systems of social services for health, education and employment.

23. The papers presented at the Tokyo and Oslo symposiums and the discussion of their content may help to push the debate on the restructuring of the global economy into a framework in which economic growth is promoted in a form that is sustainable from both a human and an environmental perspective. The papers from the Oslo symposium, now being edited for publication in 1994, will be available for wider use in future debates and policy formulation.

24. The theme of changing State/society perspectives on the United Nations system, developed in a book of the same title, might also be termed "multilateralism in a changing world order and the role of the United Nations", but viewed from the perspective of the nation States. The authors of the book examined the relationships between States and societies and the "world order" represented by institutions of the post-1945 United Nations system against the changing world political situation in the post-cold-war era. Their objective was to gain a better understanding not only of how States and societies participate in the changing multilateral system, but also how such participation has affected States and domestic State-society relations and, in a continuum of interactions, how the United Nations system has, in turn, been influenced by different pressures for change that have emerged from its Member States.

25. A book entitled Global Transformations is the result of intensive discussions around papers presented at a symposium held at Yokohama, Japan, in 1992 and the scholarly dialogue within the network of the UNU programme. The outcome is a comprehensive review of contemporary issues. One main theme of the study is the integration of policy and the tension between globalization and democratization as it is manifested in different regions and cultures. While globalization and democratization are not theoretically contradictory or mutually exclusive, they are often in conflict with each other in actuality. To complete the picture of global transformation, the study brings to centre stage the new actors in the globalization process, for example, indigenous movements, democratization movements, citizens and non-governmental organizations at the local and international levels. The study also reflects on the emerging new world order, with the United Nations system playing an important role in the enforcement of the rule of law in international relations.

26. To some extent, 1993 has also been a year for planning additional work on the theme, building on the Secretary-General's broad framework drawn from "An Agenda for Peace" (A/47/277-S/24111). Several meetings, held in New York, Ulster, Barcelona and Tokyo, discussed plans for research, reflection, policy-making and training activities in that framework. At a meeting in New York in April 1993, scholars, diplomats and senior United Nations officials proposed that UNU undertake studies on issues concerning multilateral action and global governance, such as the concept of the sovereignty of States, the criteria for intervention, preventive diplomacy, the role of regional organizations in the maintenance of regional security, and peace-keeping operations. These plans have been included in the UNU programme of work for the biennium 1994-1995 within the broad theme of "the United Nations system, global governance and security".

2. Governance and conflict resolution

27. While international television networks continued to show Guernica-like scenes almost daily, drawing attention to the most barbaric practices of human cruelty in various parts of Europe and in other parts of the world, breakthrough talks on peace in the Middle East, peace-keeping operations in Cambodia, South African efforts towards reconciliation and other examples of governance and conflict resolution at work gave some hope for the future.

28. Meanwhile, UNU studies in 1993 contemplated issues of early warning and preventive diplomacy in a seminar held in Tokyo within the framework of the governance and conflict resolution programme. In another seminar, at Coleraine, Northern Ireland, in October 1993, 34 scholars representing wide-ranging social science disciplines reviewed the state of the art and identified major issues for inclusion within a long-term research programme on conflict resolution and ethnicity. The new programme, which will focus on ethnic issues and conflict resolution and peace, is evolving from, and expanding, ongoing programmatic activities under the University's current conflict resolution programme. Launched in early 1993 on the basis of an agreement of cooperation concluded between UNU and the University of Ulster, the programme is aimed at providing instruments of research to scholars and policy makers by building up communication facilities such as databases, networks and other supports for scholarly work. Training is also included in the programme as an essential element for strengthening a conflict resolution approach.

29. Other aspects of violence and peace were addressed by UNU scholars and scientists in 1993 in various circumstances and tones. At the inaugural symposium in mid-February, for instance, Nobel Prize laureate Sir John Kendrew (United Kingdom), addressing the theme of politics and science, said

> "I can't imagine any greater stupidity by the human race than the way in which all countries, including my own, supply advanced weapons with which people are supposed to kill one another. Because, if they're not for killing one another, what purpose have they?" 3/

30. Although academic work might be seen as powerless to stop the growing violence in the world today, it is well recognized that clarifying the roots and processes leading to conflicts is helpful in anticipating eruptions of violence and in identifying mechanisms to prevent or stop it. In that regard, one UNU publication resulting from UNU studies and praised by reviewers is The Culture of Violence. The case-studies in the book focus on various forms of violence, from the ones affecting indigenous populations or children or racial minorities in modern cities to the origins of crime in illicit drug-trafficking. The first title in a series of monographs on the theme of conflict resolution with a more action-oriented approach, Participative approaches to peacemaking in the Philippines, is based on concrete experiences of grass-roots social workers.

B. The environment

1. How does it fit in the work of the United Nations University?

31. The environment continues to be of intense concern to all parts of society, including Governments, politicians, journalists, social action groups of a broad spectrum, scholars and ordinary citizens. The importance of developing a better understanding of it was highlighted in the past year by a number of developments, including natural disasters in various parts of the world, linked

in some cases to environmental improprieties. The growing debates, often pitting politicians against scientists, over how to interpret the impact of industry on the environment is another reason to understand the environment's relationship with humans better. All point to how the complexity of global problems facing the world in which environment is often intimately intertwined with science and technology and to how crucial a better understanding is to finding proper solutions.

32. UNU research activities take into consideration that environmental problems range from localized disruptions to long-term and potentially catastrophic global-level changes. They are also based on the recognition that many of the social, economic and technological developments that contribute to those changes must be urgently made more environmentally sustainable. UNU researchers also realize the need to develop a new, coherent philosophical approach to address some of the immediate problems affecting the critical nexus of environmental and economic issues.

33. Aware of its limited capacity in a field with numerous competent academic and international institutions, UNU is concentrating on several areas in which it can make an impact. The bulk of its activities in the field are brought together under the general heading sustaining global life-support systems. They are intended as responses to the report of the World Commission on Environment and Development (the Bruntland Commission) that will emphasize the importance of attaining local and regional ecological sustainability through appropriate environmental and resource management as a means to foster awareness of research and multilateral action needed to understand and cope with global environmental change. Other activities are looking at environmental issues from the perspective of the economics of development, with the aim of formulating a global economic theory that considers the many types of values of the world's biological and geophysical resources and calls for developing better tools of accounting and economic analysis to measure the environmental impact of investment decisions at the macro- and micro-economic levels.

2. The environment versus resources

34. Work during 1993 under the sustaining global life-support systems programme area has concentrated primarily on two main fields: environmental and resource management - local and regional sustainability, and global environmental change and multilateral action. Some of the work has drawn on past activities, while other work is taking new directions. Work is also being conducted on specific emerging and current problems of interest to the United Nations. The main activity here is follow-up to the 1992 United Nations Conference on Environment and Development. In 1993, steps were taken to develop a new programme on environmentally sustainable development. At the request of the Rector, an advisory team was asked to prepare a report to define the general directions and suggest courses of action for such a programme. On the basis of the team's report, a programme for 1993-1994 has been developed.

35. With these activities the University is making modest but meaningful contributions to the environmental agenda of the United Nations by bringing academic and scholarly viewpoints to bear on policy and practical decisions. The following descriptions indicate how research, training and dissemination on important environmental questions have contributed in the past year to fulfilling the goals of the University under the theme of Medium-Term Perspective II, global change and global responsibilities, and how work in that broad and important area, together with other areas of the UNU programme,

contributes to understanding the complicated mosaic of the human condition today.

36. Activities looking at the problem from the perspective of local and regional sustainability have concentrated on a broad spectrum of work, including mountain ecology and sustainable development, natural resources in Africa and sustainable environmental futures.

3. Managing complex mountain ecosystems

37. The main concern of the mountain ecology and sustainable development project is the promotion of research and effective dissemination of research findings in the relatively neglected field of ecologically sustainable development of the mountainous regions of the world. Focusing on developing interdisciplinary methods and systematic approaches for the management of complex mountain ecosystems, the approaches used are intended to help combine the often conflicting objectives of conservation and development. Work has built on previous UNU research on mountain regions, agroforestry, land use in the humid tropics, highland ecosystems and their impact on lowland areas and water resources and tropical ecosystems. Work on current knowledge and understanding of the Earth's biosphere and physical life-support systems is building on previous research on geophysiology and natural resource management.

38. A major thrust of the project is capacity-building in developing countries. Accordingly, support has been given to the establishment and operation of several regional associations of mountain scientists. Two of these associations were involved in important developments in 1993. The African Mountains Association held its third conference and workshop in Kenya in March, with the assistance of the project, on the theme "planning for sustainable use of African mountain resources". The workshop, organized with the cooperation of UNU and the Institute for Natural Resources in Africa (INRA), was attended by 50 participants from 11 African and 3 non-African countries. The East Asian-Pacific Rim Mountain Association was established in conjunction with a workshop on "mountains of the west pacific rim" in New Zealand in May. The workshop was attended by nearly 100 participants, including representatives from Australia, Canada, China, Indonesia, Japan, New Zealand, Papua New Guinea, the Philippines, South Korea, Taiwan Province of China and the United States of America, and over 50 papers were read. A selection of the papers will be published as a special issue of the UNU journal Mountain Research and Development.

Environmental journals

The quarterly journal Mountain Research and Development is now in its 13th volume. Each of the four issues of the journal in 1993 contained about eight to ten scientific articles by leading network scholars on sustainable development of the world's mountain and highland areas, representing both natural and social science approaches.

During the year, four issues of Abstracts of Selected Solar Energy Technology (ASSET) were published. Also, evaluation questionnaires were dispatched to solicit responses for developing a new plan for the journal and its distribution.

UNU continues to publish, in collaboration with Butterworth-Heinemann, the journal Global Environmental Change: Human and Policy Dimensions. The quarterly journal, now in its third year, has rapidly achieved recognition as one of the leading journals on the topic. The journal addresses the human-ecological and public policy dimensions of the environmental processes threatening the sustainability of life on Earth. In addition to the stringently peer-reviewed scientific articles, the journal contains a "UNU Monitor" section, in which reports prepared by the Academic Division on the ongoing activities of the University are regularly presented. A special issue (March 1993) was devoted to national case-studies of institutional capabilities to implement greenhouse gas reductions in accordance with the Framework Convention on Climate Change.

39. A major research project on the Central Asian mountain transect suffered a set-back with the disruption of field work in Tajikistan's Pamir Mountains as a result of serious political turmoil. However, project work continues elsewhere in the region. The study "Effect of development on rural poverty, minority peoples and mountain environment, Northern Yunnan, China" is well under way with support from the Ford Foundation. A proposal has been developed for a new phase of the project under the title "Floods in Bangladesh: process analysis and process understanding of case-studies in our century" to study the role of the Himalayan mountains and their development in contributing to the serious floods in the plains downstream.

4. The case of Africa

40. Activities in natural resources in Africa are based on the urgent need to improve the capability of African countries to manage and rehabilitate the continent's natural resources and environment by themselves. The focus is on strengthening national institutions in Africa, mobilizing scientists and technologists throughout the continent, and providing them with the capacity to generate and apply knowledge and innovative technologies for productive work and for the formulation of planning and policy options and on increasing understanding of the socio-economic and other aspects of natural resources in the context of self-reliant development. Initially, activities have concentrated on (a) soil and water conservation and management; (b) indigenous African food crops and other useful plants; and (c) development of mineral resources.

41. The field surveys that began in 1992 were largely completed in 1993, and reports have been prepared. These cover (a) indigenous African food crops and useful plants and their preparation for food, and home gardens; (b) soil and water resources, their conservation and management, and constraints to their utilization for sustainable development; (c) mineral resources and issues associated with their management for sustainable development; (d) indigenous African useful plants, with special emphasis on medicinal plants and issues associated with their management; and (e) assessment of the extent of use of indigenous food crops grown/produced in Africa and imported food items in the preparation of foods served in hotels and other eating places. A conference is being planned to review the reports and publish them.

5. Interactions of physical and human activities

42. Activities in the area of sustainable environmental futures focus on the complex interactions of physical and human activities in changing the environment, especially in the tropical and subtropical parts of the world, and the effects upon sustainability. Their overall aim is to promote ecologically, socially and economically sustainable development through basic and applied research, training and dissemination. For this purpose, a series of regional studies has been initiated in various parts of the developing world.

43. One was a conference on sustainable environmental and resource management futures for sub-Saharan Africa held at Accra in March 1993 and hosted by the University of Ghana with the participation of UNU/INRA. The conference brought together 32 participants from 10 African countries, some European countries and various international organizations. It was opened by Ghana's newly appointed first Minister for Environment, Ms. Christiane Amoako-Nuamah. A short report and articles in international scientific journals have already been published. Editorial work for a full book is under way.

44. Human activities are an intimate part of the study on population, land management and environmental change, which emphasizes the consequences of continued population growth at the global, regional and local levels for land management and hence for the environment. That study, which focuses on field research clusters in various smallholder areas of the tropical and subtropical parts of the world, has gained momentum during 1993. Clusters have been established in Amazonian Brazil, West Africa (Ghana), East Africa (Kenya, the United Republic of Tanzania and Uganda), northern Thailand/Yunnan Province of China, Nepal and the Papua New Guinea highlands. Linkages have also been established with other UNU activities, including those on mountain ecology and sustainable development and activities at UNU/INRA, and other related programmes in the field. To help disseminate information about those activities, a twice-yearly newsletter, PLEC News and Views, was established. The first issue was published in July 1993. Following an application for major external funding, the United Nations Environment Programme (UNEP) has agreed to present the subject for funding through the Global Environmental Facility.

45. Water is also linked closely with human activities. It is another aspect of environmental concerns that has become a major constraint for development and a potential source of conflict among countries of the Middle East. One activity in which UNU was involved was the organization of the Middle East Water Forum at Cairo in February 1993, in collaboration with the International Water Resources Association. The forum, which included most countries in the Middle East, has the long-term objective of assisting in achieving mutually beneficial agreements on the optimal utilization of available limited international water resources. The forum was seen as a significant contribution to the Middle East peace talks: 17 of the participants are engaged in the ongoing bilateral and multilateral peace discussions. An authoritative book, International Waters of the Middle East, based on the scientific papers presented at the conference, has been co-published by UNU Press and Oxford University Press, India.

46. Energy has become synonymous with industrial development and progress in many parts of the world. In recent years, it has been looked at critically in terms of environmental damage and the search for alternative sources of energy. In 1993, work in the field of energy included continued cooperation with the Department of Economic and Social Development of the United Nations Secretariat and the Italian Agency for New Technology, Energy and Environment (ENEA) on a feasibility study, fund raising and a pilot activity for establishing a network

of centres of excellence of international scope on new and renewable sources of energy. An interim report of the feasibility study was completed and the Second Colloquium on Renewable Energy for Environment and Development: Capacity-Building in Developing Countries was convened at Castel Gandolfo, Italy, in December 1993. The prospects for convening a United Nations expert meeting to develop a global energy research and action agenda for the United Nations into the twenty-first century were also explored. The proposed seminar on energy, development and environment had to be postponed. (Energy questions are also dealt with under the programme on future global change and modelling.)

6. The central role of human activities

47. Because human activities are so central to the changes taking place in the global environment, these studies bring together natural and social scientists to understand better the anthropogenic causes and social and economic consequences. Their intention is also to promote the broad public support and multilateral efforts necessary to achieve the adoption of strategies to prevent or mitigate undesirable impacts of environmental change and to implement policies for dealing with environmental degradation and promoting environmentally sustainable development.

48. Several activities were completed or moved into a new phase during 1993. A major new book, Environmental Change and International Law, was published in February 1993. A book on Environmental Change and Global Governance, edited by Oran Young, George Demko and Kilaparti Ramakrishna, is in preparation for publication by UNU Press and University Press of New England. The project on global risk assessment and critical environmental zones is now in its reporting phase. The main volume on international comparisons, edited by Roger and Jeanne X. Kasperson, to be published by UNU Press, is now in production. The industrial metabolism project has reached the end of its first phase with the book Industrial Metabolism: Restructuring for Sustainable Development, edited by Robert U. Ayres and Udo E. Simonis, to be published by UNU Press and at present in production.

49. A UNU symposium on eco-restructuring was held at UNU headquarters in July 1993 to report on the first phase of the project and to plan further activities in the field. Eco-restructuring forms one of the central themes in the UNU Agenda 21, and will encompass the follow-up activities to the industrial metabolism project. In September 1993, UNU co-organized with the Japan Eco-Life Centre an international conference on eco-management, which focused on the role of the private sector and at which results from the project were also reported.

Global environmental publications

Global Greenhouse Regime: Who Pays? addresses a central issue of international negotiations on the climate change convention, covering the points of view of both the South and the North, and will provide important background for the United Nations system and related negotiations.

The conference in 1991 at Yogyakarta, Indonesia, "Toward a Sustainable Environmental Future for the South-East Asian Region", produced a book entitled South-East Asia's Environmental Future: The Search for Sustainability, edited by Harold Brookfield with Yvonne Byron, which was published earlier this year by UNU Press. One reviewer characterized this book as a significant contribution to the field because it offered valuable

new and original approaches in a concise form to the problems of sustainability of environmental development. He added that it dealt with urgent issues of South-East Asia, and one can only hope that policy makers take acute notice of it.

50. The major focus in the field of ocean governance in 1993 was on co-sponsoring, with the International Ocean Institute (IOI), the Pacem in Maribus XXI conference on ocean governance: a model for regional seas in the twenty-first century, held in September at Toyama, Japan, and completion of the editing of the manuscript emanating from the Pacem in Maribus XIX conference on ocean governance: national, regional, global institutional mechanisms for sustainable development in the oceans, organized jointly by IOI, the Intergovernmental Oceanographic Commission (IOC) of UNESCO and UNU in 1991. The book will be published by UNU Press.

51. Other activities in 1993 included organizing a special session on environmental impact assessment: methodological issues and current status in connection with the conference of the International Association of Impact Assessment, in June at Shanghai, China. This was a starting-point for a longer-term project in the field, building on earlier UNU research.

7. The environment from the economic perspective

52. The important relationship between environmental concerns and economics has become more apparent in recent years, particularly as the potential impact of social and environmental cost-benefit analysis of investment projects on natural resources and environmental services becomes more integrated into economic thinking. Through environmental economics, UNU is conducting case-studies, developing modelling of environment and development relationships and undertaking data and policy analysis. The topics of four projects include the legal framework for environmental economics, economic accounting methods that take into consideration environmental degradation, micro-economic behaviour and sectoral changes, particularly in agriculture, and decision-making in environment services management.

53. One project involves preparing a set of authoritative studies on the economics of environment and development. A second focuses on the preparation of a textbook on the economics of environmental resources. The third concerns a series of summer schools on environmental economics lectures in developing country universities. The fourth project concentrates on the preparation of a series of case-studies focusing on the economic and political aspects of global environmental protection. Among its outcomes has been a publication entitled The Economics of Transnational Commons and a report on A Global Environmental Compact for Sustainable Development: Resource Requirements and Mechanisms.

54. One outcome was three volumes entitled The Environment and Emerging Development Issues: Economics of Transnational Commons, and a textbook on environmental economics. Two regional teaching workshops were also held, the first at Colombo in mid-December 1992, for university teachers in economics from developing countries, and the second in Malta in early July 1993. Plans call for continuing the workshops and other dissemination efforts in collaboration with UNEP and the International Institute of Ecological Economics of the Royal Swedish Academy of Sciences.

8. Related issues

55. Other activities on environmental issues included the initiation of a project on natural disaster reduction in response to the International Decade for Natural Disaster Reduction. Active collaboration has taken place with the World Seismic Safety Initiative (WSSI), a programme endorsed by the Decade, as well as the International Centre for Disaster Mitigation Engineering (INCEDE) of the University of Tokyo. A task force session on the theme "Towards natural disaster reduction" was organized in connection with the Pacific Science Inter-Congress at Okinawa in June 1993. Several publications and follow-up activities are planned.

56. Appropriate strategies for sustainable development in the broad framework of energy, economy and environment were discussed in the third conference in the series on the global change and perspective programme area in October 1993. Entitled "Global Environment, Energy and Economic Development", the conference was jointly organized with the International Development Center of Japan (IDCJ), supported by the Government of Japan, including the Economic Planning Agency, Environment Agency, the Ministry of Foreign Affairs and the Ministry of International Trade and Industry, as well as the Japan Society of Energy and Resources, the Institute of Electrical Engineers of Japan, the Japan Society of Mechanical Engineers and the Japan Association of Economics and Econometrics. A book based on the conference is being edited for publication.

Public forums on the environment

UNU public forums related to the environment and sustainable development held at UNU headquarters in Tokyo in 1993 featured several well-known scientists and environmentalists.

In January, the Tyler Prize winner, Professor Edward D. Goldberg of the Scripps Oceanographic Institution in California, Chairman of International Mussel Watch, gave a talk on the topic "Coastal zone space: a site for conflict".

In March, the team carrying out the feasibility study for the establishment of the research and training centre/programme on environment and health, Professors Asit K. Biswas, John Dirks and José Tundisi, briefed the public on related issues.

Dr. Kirk R. Smith of the East-West Center in Hawaii, co-editor of the UNU book The Global Greenhouse Regime, lectured on World Environment Day in June on "The most important chart in the world", covering the connections between energy use, environmental damage and population growth and the consequent need for effectively increasing the amount of energy available to the poorest groups in the world while decreasing that used by the richest.

The new Executive Director of UNEP, Ms. Elizabeth Dowdeswell, spoke in July about "New directions for UNEP in the post-UNCED Era".

Professor Elisabeth Mann Borgese, founder and chair of the International Ocean Institute, led a panel in September on "Ocean governance for sustainable development: future directions". The panel included a number of leading figures in the field of ocean governance.

In October, the International Day for Natural Disaster Reduction was commemorated by a lecture by Professor Tsuneo Katayama, director of INCEDE and co-chair of WSSI, entitled "International Decade for Natural Disaster Reduction: are we chasing a dream?".

The UNU Global Environmental Forum II, an annual public seminar sponsored by the Obayashi construction company, was held in January on the topic "Environmental change in rain forests and drylands" and attracted a full house to the UNU Headquarters International Conference Hall. The keynote lecturers were Dr. Martin W. Holdgate, Director General of the International Union for the Conservation of Nature (IUCN), and Dr. Edward S. Ayensu, President of the Pan-African Union for Science and Technology. A report of the forum was prepared and published by the UNU Academic Division.

C. Science and technology

1. UNU inputs

57. No country can hope to achieve significant economic development without adequate development of the capacity to keep pace with the latest advancements in science and technology. While major factors such as land, labour and capital still remain crucial in how the wealth of nations is distributed, science and technology and the appropriate policies for utilizing them will be the deciding factor for nations that succeed in the coming decades. The progress being made in physics, chemistry and biology is rapidly giving rise to new materials, which are beginning to replace traditional raw materials. New technologies in the fields of micro-electronics, robotics and informatics are already fundamentally restructuring traditional divisions of labour. Given this scenario, it is possible that the accelerating developments in science and technology will aggravate world-wide problems. Such developments can also be a potential source of solutions to the same problems. Nevertheless, with the quantity of scientific information and the rate of technological innovation expanding at an unprecedented pace, the disparities between nations, in terms of access to this information and technology and their application in social and economic development, is becoming greater. Ethical issues are also becoming a major concern.

58. The increased importance of basic research in high technology fields has resulted in substantial growth in the involvement of economic interests in areas that previously had been largely the concern of academics. Universities have also been called upon to be more cost-effective and oriented towards technological applications, many of which are of commercial interest. Such interest has led to an increasing privatization of the results of basic research, with Governments and corporations restricting access to scientific and technological developments as well as the flow of information about them. The resulting effect on progress in basic science as well as its application has prompted scientists from both developing and developed countries to express concern over the eventual impact of such a trend.

59. The University's research in this area is focusing on identifying the risks and rewards of accelerating changes in science and technology as they affect development in different parts of the world. Part of this work involves attempting to identify those scientific and technological advances that hold potential for solving problems in nations at all stages of development. Other work, in which great importance is placed on the interfaces between educational

systems, fundamental and applied research and technological management, concerns the development of approaches to rethink policies to shape freely the benefits of science and technology across national boundaries, particularly by nations in need. A major aim of the work in this area is to strengthen institutions in developing countries that are involved in biotechnology and micro-informatics. It also attempts to increase access by developing countries to new scientific information and technologies. UNU research is trying to understand the issue of science and technology by approaching it from various standpoints, disciplines and areas of work, such as economics, policy formulation, technical developments, curriculum development and training of specialists. Consequently, it is focusing mainly on such aspects as the implications that new technologies, science and technology can have on development, improvement of the capacity of Latin American and the Caribbean countries in biotechnology, a key area in new technologies, and enhancing the ability of developing countries to cope in the high technology areas of microprocessors and informatics.

2. Enhancing self-reliance

60. Work is being carried out in software technology to assist developing countries in attaining self-reliance. The focus is on helping to develop advanced and indigenous software by emphasizing design calculi-oriented techniques and tools; through graduate teaching; and through research, particularly in application-domain modelling, requirements capture and programming methodologies.

61. The main activity during the year in developing advanced software was the start of the exploratory phase in September of a project to develop a railway computing system for China. Five fellows started training in advanced techniques for developing high-integrity software for the time scheduling, dispatch, monitoring and control of trains along China's busiest railway corridor, between Zhenzhou and Wuhan. The exploratory phase will last six months. Plans call for a nine-month demonstration phase, followed by a nine-month technology transfer phase in 1994-1995 and the training of a total of 20 fellows.

62. Training workshops have been held to develop an awareness of state-of-the-art industrial and front-of-the-wave research techniques and tools for the professional development of dependable software. The first, held in April at the Asian Institute of Technology (AIT) in Thailand, brought together participants from five Thai universities and three companies. The second was held in May at the Institute of Informatics at Hanoi and brought together participants from AIT, six Vietnamese universities and four firms.

63. Research during the year focused on various aspects of calculus and other mathematical tools for software development, computer-aided software development environments, robotics and Mongolian language support. At the request of the United Nations Industrial Development Organization (UNIDO), an analysis was made of the notions of accreditation of software developers and certification of software products.

64. One form of dissemination of work in this area took place with a seven-day workshop on university curricula in software technology at Beijing with participants mainly from developing countries in Asia. The aim was to promote an exchange of views between university and industry leaders from industrialized and developing countries on actual and planned university course programmes. Similar workshops are planned for other regions of the world.

65. Another form of dissemination was bibliographic listing of the steady output of relevant journal articles and reports, including relevant material from UNU activities, for dissemination to some 150 university departments and research institutes in developing countries.

3. The impact of new technology strategies

66. The impact of new technologies on development from a science and technology perspective has been looked at in 1993 through research on the mobilization of technological capabilities in developing countries and in the development of relevant policy studies. Industrialization strategy and policy from a technological perspective is the theme of a broad study on industry and innovation that grew out of the previously planned case-study on industrial innovation in Taiwan Province of China, described in the following paragraph. It is based mainly on a review and synthesis of information in the literature and is intended to produce a monograph providing a systematic exposition of an alternative view to that contained in Industry and trade in some developing countries by I. M. D. Little, T. Scitovsky and M. Scott, based on an understanding of technological development and its role in the growth of production and constructing an empirically grounded framework relevant to policy.

67. The detailed outline of the case-study on the industrialization of Taiwan Province of China was agreed on in early 1993. This research will attempt to verify a number of hypotheses generated in recent studies on newly industrialized countries about technological factors in the industrialization process. It will complement the monograph study on industrialization strategy and policy from a technological perspective described above by testing a number of major hypotheses using primary data. The main thrust is to explain the apparent success of industries in Taiwan Province of China, in closing the gap between actual productivity and the best-practised productivities in the international economy.

68. The study on the politics of technology policy in Latin America focuses on the political forces that influence the direction and success or failure of technology policies. Work in 1993 has concentrated on understanding the political constituencies involved and how they change with the nature and direction of industrialization strategies. A number of country studies have been commissioned on the role of political factors in technology policy, and drafts were submitted in early 1993. After revision, they were used in a workshop in April at Maastricht, the Netherlands. An edited volume is the planned outcome.

69. China's substantial system of State-run research and development institutes provides a large proportion of the country's scientific and technological capabilities and plays a major role in technology policy. There is, however, little information about their effectiveness. A study on the politics of technology policy in China began after it became apparent that a number of these high technology research institutions had generated commercial spin-off organizations that had entered the production sector. The study aims at elucidating the types of linkages that have developed, as well as the economic forces that have contributed to their emergence. 1993 was spent in exploratory field studies to determine if the Chinese experience would be interesting for policy-oriented research. The results of this survey are being written up and may result in a publication.

70. A number of policy studies, concentrating on current issues related to new technologies, seek to produce policy analysis that can be directed to decision makers, primarily in developing countries. The subjects of studies carried out in 1992-1993 include the impact of structural adjustment policies on the development of technological capability in sub-Saharan Africa; recent developments in protection of intellectual property and implications for developing countries; the impact of economic crisis and structural adjustment policies on science and technology policy in Latin America; policies towards technology transfer in an era of changing economic structure and rapid technological advance; and organizational change in Zimbabwean manufacturing.

4. Building on biotechnology

71. Work in the area of biotechnology is focused mainly on the Latin American and Caribbean region. During the year, a total of six courses, averaging two weeks in length, were organized for about 90 young scientists and postgraduate students from various countries in the region. Participants were introduced to new techniques of biotechnology in plant biotechnology, vaccines and diagnostics, and micro-organisms of industrial interest. One course, held in March in Mexico, covered molecular technology for analysis and engineering of the plant genome. Another, held in May in Venezuela, covered immunology and molecular genetics of human and animal retroviruses. A third, held in June in Guatemala and Mexico, focused on the biotechnology of anaerobic treatment of refuse. Another course was the third annual course on basic recombinant DNA techniques, and was held in Venezuela in September. In partnership with the International Organization of Biotechnology and Bioengineering and the Universidad Nacional Autónoma de México, the annual advanced course on biotechnological processes was organized in October. In November, a course on applications of new methods of biotechnology to agriculture was held in Argentina.

72. In addition to training, UNU fellowships were provided for the promotion of academic exchanges within the region. A total of 19 such fellowships, for periods ranging from 3 to 12 months, were awarded during the year. The fellows came from institutions in Argentina, Bolivia, Colombia, Cuba, Ecuador, Peru and Venezuela. Most of the fellowships were hosted at the Centro de Investigación y de Estudios Avanzados del Instituto Politecnico Nacional, in Mexico, the Instituto Venezolano de Investigaciones Científicas and the Universidad Central de Venezuela. Others were hosted at institutions in Argentina, Brazil and Chile.

73. Early in the year, the final report on the project on the study of diagnosis and vaccines against Brucella species was completed and submitted to Supply and Services Canada of the Government of Canada. In a review of the final report, a Canadian government scientific authority commented that the Latin American scientists who participated in the project had made significant advances towards improving the vaccination and treatment of brucellosis. The review has resulted in a second grant of 160,500 Canadian dollars for the project for two years beginning in October 1993.

74. The second workshop on plant genetic engineering took place at São Paulo, Brazil, in late November with core members from Argentina, Brazil, Mexico and Spain and other scientists. The focus was recent progress in the identification, mapping, expression and regulation of plant genes. Members of the Diagnostic and Vaccines Research Network participated as lecturers in the course on basic recombinant DNA techniques in September.

5. Strengthening scientific and technical capabilities in microprocessors and informatics

75. The main objective of these activities is to help universities world wide, in particular those in developing countries, strengthen their scientific and technical capabilities in this all-pervasive and fast-progressing field, primarily by assisting researchers to initiate and improve relevant research in their home institutions. Another objective is to enable universities to conduct advanced training in micro-electronics and informatics in order to make the universities more responsive to their countries' overall developmental needs and efforts.

76. The activities focus on three areas: the design of real-time control systems (integrated microprocessor-controlled instrumentation); informatics for system design and management of complex man-made systems; and research and advanced training in informatics and computer science in selected universities, with particular emphasis on parallelism, database management systems and image processing.

77. The status of the activities of the UNU/Government of Ireland Second Micro-informatics Project was reviewed at the meetings of the working group and steering committee that were held at Dublin in June and September, respectively. Concern was expressed at both meetings about the lower-than-expected number of fellows who availed themselves of training in Ireland under the project.

78. The first meeting of the African Scientific Conference on Informatics (formed after the first African Conference on Research in Computer Science, held in 1992) took place at Ouagadougou in July. It was decided at the meeting to hold the second African Conference on Research in Computer Science at Ouagadougou in October 1994. The meeting also reviewed the project proposals submitted to it by the newly formed research networks on computer vision (Vision par Ordinateur en Afrique pour la Recherche (VOAR)) and software engineering (Recherche africaine en Ingénierie avancée de Logiciels (ARIAL)), and approved both of them.

79. Plans are under way to build a third network on parallelism. It is hoped that local support will be derived from the relevant institutions for research activities and that support will be obtained from the Ministry of Cooperation of France for fellowships to enable young researchers to work on their doctoral theses under the network projects. Consideration will be given to supporting post-doctoral fellowships to be undertaken abroad at institutions in Africa and elsewhere. It is anticipated that each network may need one or two fellowships per year.

6. The frontiers of science and technology

80. Under this activity, advances in science and technology are examined in connection with their implications for solving pressing global issues of concern to the United Nations system. Advanced research/training workshops on selected topics on scientific/technological advances are also organized for scholars and policy makers from developing countries.

81. During the year, the editing of the manuscript from the 1991 symposium on the impact of chaos on science and society and the 1992 symposium on expanding access to science and technology: the role of information technologies was

completed. In addition, planning was initiated in collaboration with the Office for Outer Space Affairs of the United Nations Secretariat for a symposium on international cooperation in space activities for enhancing security in the post-cold-war era.

82. Various advanced research/training workshops were held during 1993, primarily in the fields of biotechnology, software technology, microprocessors and informatics and food and nutrition. These are described in the various programme reports and in section IV below. Discussions were initiated, in some cases with international scientific bodies, regarding new activities on various topics, including synchrotron radiation, remote sensing for monitoring of terrestrial and ocean ecosystems and plasma technology.

D. Human and social development

83. Article 55 of the Charter of the United Nations calls for the United Nations to promote higher standards of living, full employment and conditions of economic and social progress and development. It also places emphasis on finding solutions to international economic, social and health problems and enhancing international cultural and educational cooperation. As an integral part of the United Nations system, UNU focuses its efforts towards mobilizing the resources of the international scholarly community to improve the human condition by finding longer-term solutions to the economic and social problems that prevent more equitable and sustainable human development and welfare.

84. Central to the work of UNU in 1993 were analyses of the impact of development, both social and economic, particularly as it relates to an improvement of the human condition. Such work was focused on examining a number of interlinked considerations, including improvement of the quality of life, the impact of economic development on women, reform and structural adjustment programmes in developing economies, the impact of new technologies, improving nutrition and health status, and population and urbanization. UNU sought to address these interlinages through a multi-disciplinary approach ensuring, to the extent possible, that the results of comparative analyses of economic and social development can be brought to bear on policy and decision makers.

1. Quality of life

85. A common concern in economics and philosophy has been a clearer understanding of what is meant by the term "quality of life" and what is required within social policy considerations for improving it. UNU has brought together scholars from both disciplines, encouraging debate between them on the issue of improving the quality of life and, more specifically, fostering further cooperative inquiries between them that might yield results of use to policy makers. An adequate approach to complex economic problems from an economist's point of view could not then ignore essential philosophical questions, and a philosopher's approach would similarly require some linkage of the more theoretical queries to a sounder understanding of complex practical problems.

86. Such research has a direct implication for the formulation of public policy, in which social scientists examine activities and not just satisfactions and measure achievements within a plurality of distinct areas of living. Reflection about the complex decisions that must be made within public policy, concerning, for example, health and the distribution of goods connected with health, reveals the need to think about the whole issue of the quality of life

in a way that goes beyond conventional and imprecise economic measures. UNU research has pointed towards the need for more emphasis on philosophical questions of traditional and cultural relativity, with a view to determining whose beliefs and judgements should be the source of the measures to be used by policy makers. 4/

87. The University has also sought to come to a better understanding of the prerequisites of economic security in terms of the successful functioning of an economy as well as effective but affordable arrangements for social security. Efforts in this area have been focused primarily in India, analysing the largely successful experience of social security in Kerala, the largely dysfunctional experience of Uttar Pradesh and the mixed experience of social security in West Bengal. The aim of this research has been to draw together lessons from the diversity of experiences within India, based on inter-State contrasts and on specialized studies of experiences of particular states and their integration, with what can be learned from other countries, especially from similar efforts in China.

88. Among the valuable lessons learned from experience in China have been the apparent difficulties in safeguarding rural social security measures that have come into some conflict with the principles of economic reform, and also the underuse of political incentives. Research indicates that a discriminating use of the successful aspects of the rich variety of experiences in China might be the most useful approach for India, but the diversity of experience in India across different regions can also provide useful policy lessons. Implications for policy makers would include a general need to pay more attention to the demands of education, public health measures and social services, but an equally important consideration would be selection of the types and concentration of State activities and their use in fostering economic development and promoting economic security.

2. Women and development

89. A UNU effort on the impact of economic development on rural women in China, begun some time ago within a UNU project on household, gender and age, has sought to identify the impact of economic reforms on rural women in China since 1979, their roles in economic development and the problems encountered. The project has also sought to apply new research methods in training young research workers on women's issues and to exchange research work experience with other countries, particularly other developing countries. The study 5/ has highlighted the need for vigorous efforts to upgrade the competence of rural women, not only in general and technical knowledge but also in productive skills, and for a sense of self-betterment and independence from male support. Fuller consideration must also be given to tapping the surplus rural female workforce within economic development, paying special attention to developing township enterprises that are suitable for women, while ensuring good and safe working conditions.

90. UNU efforts are also seeking to assess the training and educational needs of women, with a view towards maximizing the opportunities that new technologies could offer them while minimizing potential threats. In assessing the impact of new technologies on women's employment, UNU is also seeking to enhance South-South cooperation among women in the developing world. Efforts to date have focused on the changing skill requirements in certain industries in a select number of developing and developed countries, with a view to identifying the areas of training that will give women greater access to new jobs. The

project has also examined issues of ergonomics, health hazards and unionization to ensure that women benefit not only in terms of the quantity but also the quality of employment in the applications of new technology.

91. Other research activities have examined the situation of women within the context of economic processes and developments since the 1960s in the Middle East. State expansion, economic development and oil wealth have combined to create educational and employment opportunities favourable to women in the Middle East. Despite limitations on female employment imposed by the region's *economy and State management*, there has been a secular trend towards altering and improving women's work and lives. Research has found, however, that this trend appeared to encounter an impasse in the 1980s in the context of a global economic crisis and regional political developments. The book emanating from these efforts 6/ recently received the 1994 Outstanding Academic Books award from Choice, a well-respected academic journal.

92. A UNU research effort on identity politics and women has examined cultural revivalism, religious fundamentalism, secular affirmation and ethnic conflicts, and has come to suggest that these constitute some of the most visible and vocal political and social movements of our time. The study 7/ viewed many of these new movements with heightened concern because of their explicit agenda for women: domesticity, control, family attachment and clearly defined gender roles. The study has found that global economic and political changes have triggered cultural revivalism with similarities across regions and religions and that constructions of national identity have gender-specific assignations.

93. The activities of the University relating to women in development and gender and development have formed a solid base for collaborative work with other United Nations entities, including the Division for the Advancement of Women of the Secretariat, the International Labour Organization (ILO), UNESCO, the Economic and Social Commission for Asia and the Pacific (ESCAP), the International Research and Training Institute for the Advancement of Women (INSTRAW), and the Food and Agriculture Organization of the United Nations (FAO). UNU continued in 1993 to participate in inter-agency preparations for the Fourth World Conference on Women, scheduled to be held at Beijing in September 1995, and is working to contribute to the 1994 World Survey on the Role of Women in Development.

94. UNU research on democratic reform and the position of women in transitional economies emanating from a 1991 research conference on gender and restructuring: perestroika, the 1989 revolutions and women has provided a comparative perspective that had previously been missing from most theoretical studies. The study indicates that certain outcomes of privatization and democratization that have been regarded as unexpected consequences could in fact have been predicted. In particular, developing country experience with structural adjustment programmes offered significant clues as to the possible social, gender and national development consequences of the prescribed economic reforms in Eastern Europe. 8/

3. Economic transitions

95. In 1991 UNU arranged for a group of leading economists to begin preparing annual reports on major economic issues. To date, these reports have concentrated on issues of economic transition in Eastern Europe. In its 1991 report the group identified three main steps of the reform process: macrostabilization and price liberalization, privatization and restructuring.

The 1993 report 9/ returned to these three themes and examined the prospects for success of efforts by the Russian Federation at reform without stabilization. It develops the concept of privatization not simply as the distribution or sale of State assets but rather as the distribution of assets that have multiple claimants, for example, workers, managers, local authorities and ministries. The report also draws on the experience of the post-World War II European Payments Union to recommend a similar payments system, recognizing that convertibility is unlikely to be implemented quickly in the republics of the former Soviet Union. Examining the progress of Poland in restructuring, the report shows how the lack of progress on privatization damages the evolution of State firms, and looks behind impressive private-sector growth towards a realization that such growth will still be insufficient to replace State firms for the foreseeable future.

96. Previous UNU research had focused on stabilization policies essentially designed to tackle shorter-term problems arising from external and internal shocks. Among the findings of that research was the need to address adjustment questions in developing countries from a longer-term perspective. Continuing UNU efforts 10/ have explored the implications of returning to a long-run growth path supported by a degree of external self-reliance and a socially acceptable internal income distribution. The findings of the research of UNU on the medium-term development issue take stock of different approaches to questions of adjustment and examine the application of the existing body of knowledge to practical problems faced in developing countries.

97. Individual country studies were undertaken with the basic premise that each economy can be sensibly analysed only in terms of its own history and institutions. Consistent with this perspective, medium-term prospects were explored in terms of an interacting set of saving and foreign and fiscal constraints. No standard prescriptions or solutions emerged out of the country studies, but the studies did highlight the implications of specific circumstances for the economy of each of the countries. The analyses focused on the likely trade-offs in macroeconomic decision-making under given situations and addressed the central issue of whether reform packages to cope with changes in internal and external circumstances were feasible in the context of a country's historical and institutional background.

98. The country studies also provided a basis for estimating the net additional resources required for achieving socially necessary growth in the third world as a whole during the 1990s. The study suggests that, if the developing countries are to maintain growth rates permitting the achievement of minimum socially necessary development goals, additional external resource inflows rising from US$ 40 billion in 1990 to US$ 60 billion by the turn of the century will be required, and that this amount could be obtained, for example, from the budgets of the Organization for Economic Cooperation and Development (OECD) countries by doubling the present level of overseas development assistance from 0.35 per cent of OECD gross national product (GNP) to the internationally agreed target of 0.7 per cent.

99. Within other research activities, UNU has sought to develop a broad framework for cooperation on aid and development policies in the 1990s. A review of the objectives of aid and development policies concluded that there was now a mutuality of interests between the industrialized and developing countries, not least because of environmental concerns. The study 11/ also examined the design of aid and development policy and the case for conditionality, and put forward a variant of "development compacts" between a developing country undertaking a programme of adjustment and a group of

industrialized countries providing the necessary help, which had been elaborated in a previous UNU study. The research effort also attempted to tackle the difficult issue of mobilizing resources for aid and suggested a proposal for incorporating within the direct tax systems of industrialized countries a new line of tax for supporting foreign aid, based on the diminishing utility of income above a certain level.

4. Socio-economic impacts on technology

100. UNU research in 1993 also focused on the impact of new technologies on export-oriented growth, particularly concerning the development of manufacturing exports in sub-Saharan Africa. Research continues on the collection of data on successful exporting firms in Côte d'Ivoire, Kenya, Mauritius, Nigeria, Tanzania and Zimbabwe. The study is meant to explore the technological conditions under which some sub-Saharan enterprises have been able to achieve exports, including an analysis of the technological history of successful firms and of the way they have coped with international technological advance in the industrial sector.

101. Research has also been undertaken on technologies, economies of scale and the location of production to seek empirical evidence to support the claim that innovations in control systems have provided greater flexibility, which have thus reduced the scale requirements of production. A tentative conclusion of the review work undertaken so far is that claims in the literature that new technological innovations have generally reduced the incidence of economies of scale in the industrial sector might be misleading. While such a reduction may well have happened at the product level, it is much less clear at the plant and firm levels.

102. UNU research initially attempted to build some bridges between the micro-economics of innovation and technical change, and macroeconomic aggregates. Given the difficulty of the task, project activities have more recently been concerned with more restricted empirical inquiries, in particular, econometric examination of possible complementarities between the import of foreign technology and local technological capabilities.

5. Nutrition and poverty

103. The University has also sought to address economic and social development from a perspective relating nutrition and poverty. A high degree of nutritional deprivation is considered to be an indicator of poverty. The definition of an appropriate nutritional standard and its measurement are, therefore, of importance for determining the level and magnitude of poverty. A UNU study 12/ has focused on differing views and perceptions on the related questions of assessing poverty and nutritional status, attempting to define a reference standard of nutritional status for comparative assessment purposes. Also taken up within the study has been energy-related nutritional deprivation, specifically, whether to compare calorie intake against an average reference standard or to compare anthropometric measurements of the body with some reference standard. The study has also considered the question of possible gender bias in the incidence of nutritional deprivation. Evidence does suggest the existence of bias against females, but the study cautions that further research is necessary to arrive at firm conclusions. UNU efforts have been directed towards contributing to the ongoing debate and towards advancing the level of knowledge on these important questions.

104. During 1993, UNU received additional indications that wider use is being made of its rapid assessment procedures (RAP) methodology, which was originally developed for use with nutrition and primary health-care programmes. Specialized RAP guidelines to follow up the original RAP guidelines for the evaluation and improvement of programmes in these sectors were completed in 1993, covering such areas as improving household management of diarrhoea, and AIDS-related beliefs, attitudes and behaviours.

105. Anaemias, the great majority of which are due to iron deficiency, constitute the most universal and prevalent nutrition problem in the world. UNU, working with the World Health Organization (WHO), has developed a master protocol for comparing the effectiveness of a weekly versus a daily iron supplement in anaemic pregnant women, in adolescent girls and in preschool children. As a part of its continuing efforts in this area, UNU participated in the Administrative Committee on Coordination Subcommittee on Nutrition (ACC/SCN), and UNU consultations with WHO and the United Nations Children's Fund (UNICEF) have led to a decision to reorganize the UNU-sponsored Group for the Control of Iron Deficiency to be redeployed for advocacy purposes as the International Commission for the Prevention of Iron Deficiency.

106. UNU efforts to establish regional or subregional food composition databases under its International Network of Food Data Systems (INFOODS) project continued in 1993 with the setting up of the necessary computer facilities in New Caledonia for OCEANIAFOODS. Support from the International Development Research Centre of Canada made possible the equipping of subregional databases at two UNU core institutions in Latin America, namely, the Institute of Nutrition of Central America and Panama in Guatemala and the Instituto de Nutrición y Tecnología de Alimentos in Chile. Efforts are proceeding for the completion of the INFOODS network with regional groups for the Arab countries and south Asian countries. A separate INFOODS regional database for francophone African countries is also under consideration.

107. A companion UNU project continued to assist developing countries in summarizing dietary intake data for the past 30 years and making it possible for hard copies of the data to be available for interested researchers. These data are essential for epidemiological studies of diet and disease, for understanding dietary trends, for long-range planning and for a variety of other purposes. Data sets for Mexico were completed in 1993, and those for Argentina, the Caribbean and Oceania are awaiting final completion.

6. Population and urbanization

108. One other aspect of UNU research in 1993 related to the human condition dealt with the implications of demographic change and urbanization. These efforts have been directed towards analysing the evolving urban systems in Africa, Latin America and the Pacific-Asia region. The Asian study is in press, and two regional studies for Latin American and Africa are continuing. Case-studies on Rio de Janeiro, São Paulo, Buenos Aires, Mexico City and Lima and research findings on housing, alternatives of transportation systems and the role of public administration in Latin America were reviewed at a November 1993 research conference. Research activities concerned with the challenge of urban growth in Africa were initiated at the end of the year.

109. "Harmonizing population and development" served as the theme for UNU's 1993 Global Seminar, which sought to identify and analyse the complex interlinkages between population and development at the national, regional and global levels

and dealt with the question of how international cooperation could address population concerns within the context of sustainable development.

United Nations University global seminars

The UNU global seminar is intended to help the participating university students to understand global issues and the United Nations system better through lectures and dialogues with scholars and experts invited from all over the world. This annual seminar series is organized in collaboration with eight Japanese universities that share a common interest in academic research and training on international affairs. Started in 1985, the seminars have taken up such themes as "International organization" (1985), "The United Nations and international peace" (1986), "Development and the United Nations" (1987), "The nation and ethnicity" (1988), "Technological development and human welfare" (1989), "Communication and international relations" (1990), "Restructuring the world order and the United Nations" (1991) and "Globalizing cultures and perspectives" (1992).

IV. BUILDING RESEARCH CAPACITIES: FELLOWSHIPS AND TRAINING

A. United Nations University fellowships

110. The year 1993 witnessed the awarding of 82 fellowships by UNU, the highest number in any given year since 1986. This represented a 55 per cent increase over 1992. This welcome development was due mainly to the increased training activities conducted by the UNU research and training centres and the UNU Programme on Biotechnology for Latin America and the Caribbean (UNU/BIOLAC). With 63 UNU fellows completing their studies during the year, the total number of former UNU fellows at the end of 1993 was 1,232.

111. Within the framework of an agreement of cooperation concluded between UNU and the Kirin Brewery Company, Ltd., in December 1992, four UNU fellows from China, the Philippines, Thailand and Viet Nam started their research training programme at the National Food Research Institute at Tsukuba, Japan, early in the year. A fifth fellow, also from China, began his studies in October, filling all the available UNU-Kirin fellowship positions for the year. The agreement provides for the award of five 12-month fellowships annually for a period of five years, with support from Kirin covering all expenses for the fellowships and providing limited funds in support of follow-up research activities by these fellows after they return to their home institutions.

112. The fifteenth annual course of the UNU Geothermal Training Programme, which was inaugurated in 1979, was held at the National Energy Authority in Iceland during the year. The six-month course was attended by 13 fellows from China, Bulgaria, El Salvador, Kenya, Lithuania, the Philippines and Romania. This is the highest number of fellows attending the course in any given year. Support from the Government of Iceland covered 85 per cent of the entire cost for the course. The programme holds the distinction of being the longest-running continuous training activity of UNU; the sustained support of the Government of Iceland has made this possible. Since 1979, a total of 120 young engineers, geologists, physicists and chemists selected from those countries in the developing world and Eastern Europe with potential in geothermal energy sources have been trained at the National Energy Authority in such areas as geological exploration, borehole geology, geophysical exploration, reservoir engineering, the chemistry of thermal fluids, the geothermal utilization and drilling technology.

113. Under a joint fellowship agreement reached between UNU and the Foreign and Commonwealth Office of the United Kingdom of Great Britain and Northern Ireland in 1992, three fellows from Brazil, China and Nigeria are currently undertaking their post-doctoral research in such areas as food technology, science and technology policy and remote-sensing technology at various universities in the United Kingdom. Two UNU fellows are expected to begin their training at the UNU-University of Ulster International Programme on Conflict Resolution and Ethnicity early in 1994. Up to nine fellowships are available for the 1993/94 academic year under this arrangement, which obligates UNU and the Foreign and Commonwealth Office of the United Kingdom to share the expenses equally. The fellowships have been primarily targeted for post-doctoral research training of selected staff members of UNU associated and cooperating institutions.

114. The seventh International Course in Remote Sensing Technology was held at the Instituto de Pesquisas Espaciais in Brazil with the participation of five UNU fellows selected from institutions in Latin America. The six-month course was organized within the framework of an agreement of cooperation between the

UNU and Coordinaçao de Aperfeiçoamento de Pessoal de Nível Superior/Conselho Nacional de Desenvolvimento Científico e Technológico, the two Brazilian government agencies which share the expenses of fellowships at Brazilian institutions.

115. Two fellows from Cuba and one from Costa Rica are continuing their two-year training in science and technology policy at the Universidade Estadual de Campinas in Brazil under the same cost-sharing scheme. These fellows are expected to complete their studies for a master's degree in February 1994.

116. A six-week course in Limnology and the Management of Inland Waters started in November at the Universidade de São Paulo in São Carlos, Brazil, with nine UNU fellows participating.

117. Under the UNU/BIOLAC programme, a total of 16 UNU fellowships were awarded during the year for research attachments for periods ranging from 3 to 12 months at some of the leading biotechnology laboratories in Latin America. This represents a nearly twofold increase in the number of fellowships implemented from the previous year.

118. A total of five fellows from African countries received training in micro-informatics at various universities in Ireland and other research centres under the UNU-Government of Ireland second micro-informatics project. The expenses for the fellowships were covered by a grant made to UNU by the Government of Ireland.

119. The United Nations University International Institute for Software Technology (UNU/IIST) awarded four 4-month fellowships to Chinese candidates for carrying out research studies on the design techniques for real-time systems under the joint UNU/IIST-China research project, which was inaugurated in December 1992. Another group of four fellows from China started training in a nine-month course in advanced techniques of railway software development at UNU/IIST at Macau. One fellow was awarded a 12-month fellowship for training in a rigorous approach to individual software engineering and in advanced facilities management at UNU/IIST at Macau.

120. The UNU Training Programme in Renewable Energy Systems got under way in late August at the Centre for Energy Studies of the Indian Institute of Technology in Delhi. A total of eight fellows from countries in Asia and Africa were participating in the eight-month course at the end of 1993. Discussions were undertaken in 1993 to inaugurate a training programme on environment and energy involving a consortium of institutions at Madras, India, led by Anna University. A cost-sharing arrangement has been agreed upon between UNU and the Department of Science and Technology of India for covering the training expenses of the programme. Living expenses for the trainees and the training fees will be covered by the Department, while UNU is committed to defraying the expenses for international travel and insurance for the fellows. Five fellows are expected to participate in the first programme in 1994.

121. The year witnessed the strengthening of ties between UNU and the University of Ghana's Department of Nutrition and Food Science, which became a UNU-associated institution in 1979. The Department, which is one of the institutions actively participating in the Joint Association of African Universities/UNU African Regional Food and Nutrition Project, served as the venue for the post-doctoral research of two Nigerian university lecturers under UNU fellowships. On the other side of Africa, the University of Nairobi, which was designated a UNU-associated institution in 1986, accepted two UNU fellows

from the Ethiopian Nutrition Institute and the Tanzania Food and Nutrition Centre for the two-year post-graduate programme in food policy and planning. These developments in Africa, coupled with the strides made in Latin America under the UNU/BIOLAC programme, are encouraging steps in UNU's effort to bring about closer contacts among scholars and scientists in developing countries. It is hoped that UNU can play an expanded role in the future in this important area that will help "alleviate the intellectual isolation of persons in such communities in the developing countries which might otherwise become a reason for their moving to developed countries". 13/

122. Training in the area of food and nutrition continued in 1993 at the Central Food Technological Research Institute in India and the Institute of Nutrition for Central America and Panama in Guatemala, both of which were among the first designated UNU-associated institutions. The Division of Nutritional Sciences of Cornell University, in the United States of America, has expressed interest in serving as the venue for the UNU Food and Nutrition Programme. As a preliminary cooperative activity between UNU and the Division, an agreement has been reached to implement two UNU fellowships under a cost-sharing arrangement whereby UNU will bear travel, stipend and insurance expenses and Cornell University will waive tuition and other training fees. Two UNU fellows are expected to begin their training in January 1994.

B. Training workshops

123. A six-week course on analysis and management of geological risks took place at the University of Geneva, Switzerland, for 15 trainees, with support provided by UNU. UNU/IIST offered short-term training workshops on computer software technology at Bangkok and Hanoi for 73 selected individuals from institutions in India, Pakistan, Thailand and Viet Nam. A UNU/IIST training workshop on university curricula in software technology was held at Beijing in mid-November for about 40 participants. A regional training workshop on peace and conflict resolution in southern Africa is expected to take place in Kenya in early 1994. It will be modelled after a similar workshop held in Moscow in 1992. The UNU/BIOLAC programme also organized six 2-week courses in Argentina, Guatemala, Mexico and Venezuela with over 90 young scientists and post-graduate students participating.

124. Altogether, over 230 individuals attended UNU short-term training workshops, with durations ranging from one to six weeks.

United Nations University fellowships and training

Eighty-two UNU fellowships were awarded in 1993, a 51 per cent increase over 1992.

UNU fellows in 1993 came from Argentina, Bangladesh, Bolivia, Brazil, Bulgaria, Cameroon, Chile, China, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Ethiopia, India, Kenya, Lithuania, Mexico, Nigeria, Panama, Peru, the Philippines, Romania, the Sudan, Tanzania, Thailand, Uganda, Uruguay, Venezuela, Viet Nam and Zambia.

Sixty-five per cent of the UNU fellows trained in 1993 received training at institutions in developing countries; 35 per cent received training at institutions in developed countries.

The main areas of UNU training in 1993 included biotechnology, micro-informatics, food science and technology, science and technology policy, remote sensing, geothermal energy, renewable energy systems and limnology and the management of inland waters.

Some 230 individuals attended UNU short-term training courses of one to six weeks' duration.

V. DISSEMINATION OF RESEARCH FINDINGS

125. The dissemination efforts of the University are meant to ensure that the learning derived from its research and from research relevant to its own activities has the broadest possible impact, particularly in enhancing the learning capacities of all societies to understand and cope with problems of an increasingly multifaceted, interdependent world. The publishing programme of the University, under the direction of the UNU Press and supported by other publishing arrangements, serves to support and extend the impact of the University's academic activities. Since 1975, some 350 books and many issues of four journals, as well as numerous reports, papers, studies and journal articles, have been issued. Taken together, these publications represent a major part of the knowledge created by UNU research.

126. Dissemination activities also help to project the image and profile of the University as both an academic institution and a part of the United Nations, particularly by making its work better known to its various constituencies, including the United Nations system, the international scholarly community, non-governmental organizations and the public. A broad range of public information materials and approaches have been developed and maintained during the past 19 years towards this end.

127. During 1993, 10 books were published under UNU's imprint and 16 books were issued through specific co-publishing arrangements. A list of the titles issued by UNU in 1993 can be found in annex I.

128. In order to meet the greater demands created by an increase in publications produced by the University, the UNU Press has improved and strengthened its editorial, production, sales and marketing and promotion activities. While several distribution relationships throughout the world were continued in 1993, a new distribution relationship was established with UNIPUB in the United States. The emphasis placed on strengthening these distribution arrangements has helped to bring increased visibility and sales of UNU books world wide. Providing more timely and appropriate information to the distribution partners of the UNU Press has also helped to strengthen their overall effectiveness in handling UNU titles. Efforts to improve the focus, grouping and presentation of lists of UNU titles, particularly in UNU Press sales catalogues, have also helped to enhance the profile of the UNU Press and the visibility of the published output of UNU research. A special catalogue of UNU titles related to the environment and flyers on forthcoming UNU books were two such initiatives.

129. A challenge to the UNU Press during the year was to identify new potential markets in Asia and Latin America which would also help to increase awareness in these regions of the University's work. The year 1993 also saw considerable improvement in the ability of the UNU Press to arrange more timely reviews of UNU books. Nearly US$ 300,000 was generated from the sale of UNU publications during the 1992-1993 biennium, and it is hoped that the continued marketing and promotion efforts by the UNU Press will result in increased revenues in the next biennium.

130. Display and sales arrangements at UNU conferences and symposia and at meetings organized by other organizations within the conference facilities at the new UNU headquarters since it was officially opened in February 1993 have helped to make the Japanese public more aware of UNU publications and activities and have brought increased revenues. During 1993 the Press was also able to

increase sales of translation rights and permission to reprint or photocopy material from UNU publications.

131. In addition to strengthening its sales-related capabilities, the UNU Press has worked to improve the design of its books and to handle a broader range of published output, including monographs, reports and papers. Interactions with colleagues in the United Nations system have highlighted the increased recognition being accorded to UNU Press publications. The Press also provided publishing support and advice to other parts of the UNU system, including research and training centres and programmes located in several locations around the world.

United Nations University books

Since 1975, UNU has published some 350 books.

Ten books were published under the UNU's imprint in 1993; 16 additional books were issued through specific co-publishing arrangements.

UNU publishing activities are coordinated by the UNU Press.

132. UNU issued its four journals during 1993: Food and Nutrition Bulletin, Journal of Food Composition and Analysis, Mountain Research and Development and ASSET (Abstracts of Selected Solar Energy Technology). UNU also continued its involvement in publishing the journal Global Environmental Change with Butterworth Publishers.

133. UNU maintained depository libraries in 67 countries during 1993, and it is hoped that additional such libraries can be established in the 1994-1995 biennium, but this will depend on the mobilization of external resources.

VI. THE STATE OF THE UNIVERSITY, 1993

134. A highlight of 1993 was the formal opening of new permanent headquarters building of the University in mid-February at the time of the thirty-ninth session of the Council of UNU. In attendance at the inaugural ceremonies were Mr. Boutros Boutros-Ghali, Secretary-General of the United Nations; the Crown Prince of Japan; Mr. Yohei Kohno, Minister of State and Minister of Foreign Affairs, a.i.; Ms. Mayumi Moriyama, Minister of Education, Science, Culture and Sports; Mr. Shunichi Suzuki, Governor of the Tokyo Metropolitan Government; Mr. Federico Mayor, Director-General of UNESCO; members of the Council of UNU; scholars; diplomats; representatives of the non-governmental organization and business communities; and numerous other distinguished guests from Japan and abroad. The new headquarters building, which was built for the University by the Government of Japan on a plot of land made available by the Tokyo Metropolitan Government, has 21,300 square metres of floor space and provides the University headquarters with excellent office and conference facilities from which to plan and coordinate UNU's global research, capacity building and dissemination activities.

135. The new headquarters building has helped to raise the profile of UNU, particularly in Japan, and the University has made concerted efforts during 1993 to strengthen its visibility and outreach both in Japan and abroad. In 1993, 17 international workshops, symposia or conferences were held in the conference facilities of the new building. The UNU Public Forum Series brought 15 distinguished scholars, heads of other United Nations organizations and a head of State to UNU headquarters to address the local scholarly and diplomatic community. More than 7,300 persons attended academic activities held in the headquarters building in the period February to December 1993.

136. The year 1993 was one in which other parts of the University moved to new premises. In June, the UNU World Institute for Development Economics Research (UNU/WIDER) moved to new temporary premises made available by the Government of Finland, and the UNU International Institute for Software Technology (UNU/IIST) relocated to new temporary premises in Macau. In December, the UNU Institute for Natural Resources in Africa (UNU/INRA) moved from its interim programme offices at the UNESCO Regional Office for Science and Technology in Africa at Nairobi to premises at the University of Ghana at Legon. The installation of UNU/INRA in its host country of Ghana marks an important step forward in its development, which it is hoped will support efforts to mobilize additional endowment fund resources for the Institute.

137. Efforts aimed at enabling UNU to make a greater impact on and input into the work of the United Nations system continued and were intensified in 1993. During his visit to Tokyo for the official opening of the new headquarters building, the Secretary-General called on UNU to become a "reservoir of ideas" for the United Nations system and to make available the results of its research initiatives for the ongoing deliberations and work of the United Nations. In this regard, the University has endeavoured to bring more overall coherence and cogency to its activities, which are by nature decentralized within research and training centres and programmes located in different parts of the world. Three meetings of the directors of UNU research and training centres and programmes were held in 1993 with a view towards increasing the interaction among UNU research and training centres and programmes and enhancing the effectiveness of UNU's contributions to the work of the United Nations. UNU officials have intensified consultations and coordination with other United Nations organizations at various levels to ensure, to the extent possible, that UNU

academic activities complement ongoing deliberations and discussions and, in some cases, research initiatives of these other organizations. These interactions are expected to be strengthened during the 1994-1995 biennium, when UNU proposes to commit some research resources to conducting policy studies on issues of fundamental interest to United Nations agencies which correspond to the research capacities of the University. During 1993, UNU has been able to work more closely with several United Nations organizations, including ESCAP, FAO, ILO, INSTRAW, the United Nations Conference on Trade and Development (UNCTAD), The United Nations Development Programme (UNDP), UNEP, UNESCO, the United Nations Development Fund for Women (UNIFEM), UNIDO and WHO.

138. Several new initiatives were undertaken in 1993 with a view to strengthening UNU contributions to the United Nations system. In April, the Rector convened a special Advisory Team on Agenda 21 to assist him in putting together a 10-year plan of research, capacity-building and dissemination activities within the area of environmentally sustainable development. The advisory team met three times, and in September 1993 presented its final report to the Rector, setting out an overall framework for UNU efforts in this crucial area. The report highlighted the need for strengthening UNU capacity-building efforts, in close collaboration with UNDP and UNEP, particularly in the area of post-graduate education programmes in the field of integrated environmental management.

139. In October 1992 the Rector appointed an international team to undertake a feasibility study to determine the long-term need for establishing a UNU research and training centre or programme on environment and human health. The feasibility study report, submitted to the Rector in December, calls for the establishment of an international networking structure in Ontario, entitled the UNU International Network on Water, Environment and Health (INWEH), which will make use of the intellectual resources and physical facilities of universities in Ontario and link them with a number of international cooperating units in developing regions of Africa, Asia and Latin America. Annual core funding for INWEH is expected on an equally shared basis between the Governments of Ontario and of Canada, initially for five years, and renewable. The activities of INWEH respond to one of the priority concerns of Agenda 21 adopted at the United Nations Conference on Environment and Development at Rio de Janeiro in June 1992, and it is envisaged that it will work in support of and in close cooperation with other United Nations organizations.

140. UNU also began to formulate a set of academic activities aimed at contributing to the Secretary-General's Agenda for Peace. In April, a planning meeting was held in New York to elaborate a specific set of research and training activities within the area of the Agenda for Peace, focusing in particular on preventive diplomacy, the criteria for intervention, peace-keeping operations and regional organizations and arrangements.

141. Related to the Agenda for Peace is a continuing initiative of UNU to establish a research and training centre on governance, state and society. In November 1992, the President of the Generalitat of Catalonia and the Rector of UNU signed a memorandum of understanding and a statement of intention regarding the creation of this centre at Barcelona, Spain. Pending further negotiations with the Spanish and Catalan Governments with a view to elaborating the requisite formal agreements, a systematic effort has been undertaken in 1993 to explore themes and researchable issues, methodological approaches and institutional partnerships for the programme of academic activities of the future centre. This process has focused to date on the following five themes, which may form the basis of the work programme of the centre: ethics and

governance; governance in the context of economic transition; legitimacy and leadership in the context of governance; multilateralism; and environmental governance.

142. In 1991 UNU commissioned a feasibility study involving the University of Ulster on the possible establishment of a joint international programme on conflict resolution and ethnicity (INCORE) in Northern Ireland. The feasibility study report was reviewed by a panel of 24 international experts, and a programme developed from the report was approved by the Council of UNU in February 1993. INCORE is meant to cooperate with international organizations, especially the United Nations and regional bodies, and will develop a systematic approach to the problems of ethnic conflict. It will encourage links between research, training, policy, practice and theory, and hopes to stimulate research and training in developing countries in particular. Within INCORE's preparatory phase, a research workshop was held in late October to review existing research in the areas of ethnic conflict and conflict resolution and to develop a five-year programme of research and training.

143. The new permanent headquarters building in Tokyo, while presenting new and important opportunities for UNU, has also brought with it significant financial burdens linked to the building's maintenance and operation. These operational costs, essentially maintenance, utilities and security, which are not covered by the host Government of Japan, must be met from the University's own limited financial resources. Income both for the work of the University and for the maintenance of its headquarters must come from the investment income derived from its endowment fund and from operating contributions. The increased financial burden of the headquarters building has meant that the University has been unable to make the fullest possible use of the new facilities. Allocating precious resources towards headquarters maintenance costs reduces the amount of funds available for academic initiatives. This has made it essential to continue to exercise strict cost-saving measures to ensure that the costs for the headquarters remain at a minimum. Similarly, it has directed UNU to strengthen and extend efforts to mobilize additional financial contributions for programme activities.

144. During his visit to Japan in February, the Secretary-General requested that office accommodation be made available for the offices of other United Nations organizations located in Japan. The location of United Nations offices in the UNU headquarters building will help to ensure closer interaction between the University and these organizations. The ILO Tokyo Branch Office moved into the UNU building in June, and the United Nations Information Centre, the UNICEF Office in Japan and the UNDP Liaison Office moved in in December. Each of these organizations has agreed to contribute towards the maintenance costs in lieu of rental charges. These contributions will, however, help to defray only a portion of the total costs involved in the operation of the building.

145. As a voluntarily funded United Nations organization, UNU continued to face funding constraints owing to difficulties in mobilizing new untied endowment fund contributions. Contributions from previous pledges for UNU research and training centres and programmes, modest operating contributions and specific programme contributions were received during the year. The table below provides a summary of contributions of US$ 100,000 and greater received during the year. As of 31 December 1993, pledges to the Endowment Fund and operating contributions made by 51 Governments and 7 other benefactors totalled some $271 million, of which $241.3 million had been received. The University also benefited during the year from counterpart and other support, including cost-sharing support for fellowships and other activities.

Financial contributions received during 1993 (over US$ 100,000)

Source	Purpose	Amount
A. Governments		
People's Republic of China	Endowment Fund earmarked for UNU/IIST	1 300 000
India	Endowment Fund earmarked for UNU/WIDER	225 000
Ireland	UNU/Government of Ireland microprocessor informatics project	186 055
Italy	Microprocessor project	1 851 000
Japan	1993 programme activities	3 920 231
Macau	Endowment Fund and operating contribution earmarked for UNU/IIST	4 124 688
Netherlands	Operational costs for UNU/INTECH	642 623
Portugal	Endowment Fund earmarked for UNU/IIST	2 000 000
Subtotal		14 249 597
B. Private sector and non-governmental agency		
UNDP/Office for Project Services	Operational costs for UNU/INRA	300 000
Japan Foundation for UNU	Various projects in 1993	142 857
Kirin Brewery Co.	UNU/Kirin fellowship programme	221 774
Subtotal		664 631
TOTAL		14 914 228

146. The University lost an important friend, adviser and advocate in 1993 with the death of Mr. Saburo Okita. Mr. Okita had served as the chairman of the Board of UNU/WIDER and had been an active supporter of the University from the early days of its establishment. The international community of scholars that is UNU will miss Mr. Okita's wise counsel and presence.

147. During 1993 Professor Fatima Mernissi, a member of the UNU Council from Morocco, submitted her resignation from the Council. No replacement for this vacant seat had been appointed by the end of the year. Mr. Masaru Yoshitomi, Vice Chairman of the Research Institute of the Long-Term Credit Bank of Japan, was appointed as a member of the Board of UNU/WIDER to fill the seat left vacant by the death of Mr. Saburo Okita. Mr. Walter Holzer of Germany was reappointed to the Board of UNU/INTECH for a four-year term.

148. The Director of UNU/WIDER, Mr. Lal Jayawardena, completed his second four-year term in February 1993, and Professor Mihaly Simai, a distinguished Hungarian economist and former chairman of the UNU Council, was named Interim Director. Professor Simai was subsequently appointed by the Rector as the Director of UNU/WIDER through 1995.

Notes

1/ Statement made by Mr. Boutros Boutros-Ghali, Secretary-General of the United Nations, on the occasion of the inauguration of the UNU headquarters building on 17 February 1993 in Tokyo.

2/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992 (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: Resolutions adopted by the Conference, resolution 1, annex II.

3/ John Kendrew, "What is the Place of Science?", The role of the United Nations in the twenty-first century (United Nations University, 1993), pp. 65-68.

4/ M. C. Nusbaum and A. Sen (editors), The Quality of Life (Oxford University Press, 1993).

5/ All-China Women's Federation, The Impact of Economic Development on Rural Women in China (United Nations University, 1993).

6/ V. M. Moghadam, Modernizing Women: Gender and Social Change in the Middle East (Lynne Rienner Publishers, 1993).

7/ V. M. Moghadam, Identity Politics and Women: Cultural Reassertions and Feminisms in International Perspective (Westview, 1993).

8/ V. M. Moghadam (editor), Democratic Reform and the Position of Women in Transitional Economies (Oxford: Clarendon Press, 1993).

9/ O. Blanchard, M. Boycko, M. Dabrowski, R. Dornbusch, R. Layard and A. Schleifer, Post-Communist Reform: Pain and Progress (MIT Press and UNU Press, 1993).

10/ L. Taylor (editor), The Rocky Road to Reform: Adjustment, Income Distribution, and Growth in the Developing World (MIT Press and UNU Press, 1993).

11/ A. Sengupta, Aid and Development Policy in the 1990s, Research for Action Series (UNU/WIDER, 1993).

12/ S. R. Osmani (editor), Nutrition and Poverty (Oxford University Press, 1992).

13/ Charter of the United Nations University, art. I, para. 6.

ANNEX I

List of books and journals published by the United Nations University in 1993

William C. Clarke and Randolph R. Thaman, editors, Agroforestry in the Pacific Islands: Systems for Sustainability, published by UNU Press

Fawzy Mansour, The Arab World: Nation, State and Democracy, published with Zed Books, United Kingdom of Great Britain and Northern Ireland

Edith Brown Weiss, editor, Environmental Change and International Law: New Challenges and Dimensions, published by UNU Press

Cherl-Ho Lee, K. H. Steinkraus and P. J. A. Reilly, editors, Fish Fermentation Technology, published with Yu Rim Publishing Co., Republic of Korea

Peter Hayes and Kirk Smith, editors, The Global Greenhouse Regime: Who Pays?, published with Earthscan Publications, United Kingdom of Great Britain and Northern Ireland

Saral Sarkar, Green-Alternative Politics in West Germany: Vol. I. The New Social Movements, published with Promilla & Co. Publishers, India

All-China Women's Federation, The Impact of Economic Development on Rural Women in China, published by the United Nations University

C. G. Weeramantry, editor, The Impact of Technology on Human Rights: Global Case-studies, published by UNU Press

Eileen P. Drew and F. Gordon Foster, editors, Information Technology in Selected Countries: reports from Ireland, Ethiopia, Nigeria and Tanzania, published by the United Nations University

Pablo González Casanova, editor, Latin America Today, published by UNU Press

Jeffrey D. Sachs and Felipe B. Larrain, Macroeconomics in the Global Economy, published by UNU/WIDER with Harvester Wheatsheaf, United Kingdom of Great Britain and Northern Ireland

Faysal Yachir, Mining in Africa Today: Strategies in African Political Economy, published with Zed Books, United Kingdom of Great Britain and Northern Ireland

Valentine M. Moghadam, Modernizing Women: Gender and Social Change in the Middle East, published by UNU/WIDER with Lynne Rienner Publishers, United States of America

Kevin P. Clements, editor, Peace and Security in the Asia Pacific Region: Post-Cold-War Problems and Prospects, published with Dunmore Press, New Zealand

Olivier Blanchard, Maxim Boycko, Marek Dabrowski, Rudiger Dornbusch and Richard Layard, Post-Communist Reform: Pain and Progress, published with MIT Press, United States of America, United Kingdom of Great Britain and Northern Ireland

Martha C. Nussbaum and Amartya Sen, editors, The Quality of Life, published by UNU/WIDER with Clarendon Press, Oxford, United Kingdom of Great Britain and Northern Ireland

Lance Taylor, editor, The Rocky Road to Reform: Adjustment, Income Distribution and Growth in the Developing World, published with MIT Press, United States of America, United Kingdom of Great Britain and Northern Ireland

Harold Brookfield with Yvonne Byron, editors, South-East Asia's Environmental Future: The Search for Sustainability, published with Oxford University Press, Malaysia

Hirofumi Yamamoto, editor, Technological Innovation and the Development of Transportation in Japan, published by UNU Press

Saneh Chamarik and Susantha Goonatilake, editors, Technological Independence: The Asian Experience, published by UNU Press

Ken'ichiro Hirano, editor, The State and Cultural Transformation: Perspectives from East Asia, published by UNU Press

Surendra J. Patel, editor, Technological Transformation in the Third World: Vol. I. Asia, published by UNU/WIDER with Avebury, Ashgate Publishing Group, United Kingdom of Great Britain and Northern Ireland

Surendra J. Patel, editor, Technological Transformation in the Third World: Vol. II. Africa, published by UNU/WIDER with Avebury, Ashgate Publishing Group, United Kingdom of Great Britain and Northern Ireland

Surendra J. Patel, editor, Technological Transformation in the Third World: Vol. III. Latin America, published by UNU/WIDER with Avebury, Ashgate Publishing Group, United Kingdom of Great Britain and Northern Ireland

Surendra J. Patel, editor, Technological Transformation in the Third World: Vol. IV. Developed Countries, published by UNU/WIDER with Avebury, Ashgate Publishing Group, United Kingdom of Great Britain and Northern Ireland

Tariq Banuri and Frédérique Apffel Marglin, editors, Who Will Save the Forests? Knowledge, Power and Environmental Destruction, published by UNU/WIDER with Zed Books, United Kingdom of Great Britain and Northern Ireland

Journals

Abstracts of Selected Solar Energy (ASSET), Vol. 14, No. 3, Vol. 15, Nos. 1 to 3, published with Tata Energy Research Institute (TERI), India

Food and Nutrition Bulletin, Vol. 14, Nos. 3 and 4

Journal of Food Composition and Analysis, Vol. 6, Nos. 1 to 3, published with Academic Press, Inc., United States of America

Mountain Research and Development, Vol. 13, Nos. 1 to 4; published by the University of California Press, United States of America, for the United Nations University and the International Mountain Society

ANNEX II

Decision of the Council of the United Nations University on the budget for the biennium 1994-1995

The Council of the United Nations University, at its fortieth session, held at Tokyo from 13 to 17 December 1993,

Approved Part I (Budget) of the Budget and Academic Programme of the United Nations University for the biennium 1994-1995 (UNU/C/40/L.4), as proposed by the Rector, on the recommendation of the Council's Committee on Finance and Budget, as reviewed and amended by the Council, after having considered the report of the Advisory Committee on Administrative and Budgetary Questions (ACABQ) of the United Nations Secretariat (UNU/C/40/L.4/Add.1) as follows:

Projected income for the biennium 1994-1995

(Thousands of United States dollars)

	UNU Head-quarters	UNU/ WIDER	UNU/ INTECH	UNU/ IIST	UNU/ INRA	UNU/ BIOLAC	UNU/ IAS	TOTAL
1. Income from the Endowment Fund	18 864	5 096	2 182	2 729	547	277	-	29 695
2. Operating contributions	9 500	-	1 276	-	150	-	3 750	14 676
3. Contributions for the Headquarters Building	2 700	-	-	-	-	-	-	2 700
4. Sales income and royalties from publications	500	30	-	-	-	-	-	530
5. Unencumbered fund balance	5 235	2 473	1 375	-	-	520	-	9 603
6. Specific programme contributions	6 350	915	624	1 080	50	122	223	9 364
GRAND TOTAL	43 149	8 514	5 457	3 809	747	919	3 973	66 568

Estimated expenditures for the biennium 1994-1995

(Thousands of United States dollars)

	UNU Head-quarters	UNU/ WIDER	UNU/ INTECH	UNU/ IIST	UNU/ INRA	UNU/ BIOLAC	UNU/ IAS	TOTAL
Personnel costs	21 197	3 858	2 487	1 531	342	-	1 109	30 524
General expenses	4 196	1 185	1 006	762	230	7	1 300	8 686
Network/external activity costs	11 756	3 471	1 964	1 516	175	912	1 564	21 358
Headquarters Building	6 000	-	-	-	-	-	-	6 000
GRAND TOTAL	43 149	8 514	5 457	3 809	747	919	3 973	66 568

(a) Authorized the Rector to transfer funds from one category to another without exceeding the grand total of the approved budget to ensure the achievement of objectives and the meeting of defined priorities of the University agreed to by the Council, and requested the Rector to report to the Committee on Finance and Budget any transfers effected under this authority;

(b) Also authorized the Rector to accept, allocate and utilize additional funds which may be received by the University during 1994-1995 for programme activities;

(c) Stipulated that the Rector shall consult with the Committee on Finance and Budget of the Council when the University has to make expenditure commitments which would exceed the total approved budget and that all such actions shall be reported to the Council in due course;

Approved Part II (Academic Programme) of the Budget and Academic Programme of the United Nations University for the biennium 1994-1995 (UNU/C/40/L.4), as proposed by the Rector, on the recommendation of the Council's Committee on Institutional and Programmatic Development, taking into account the comments made by the Council.

ANNEX III

United Nations University Academic Programme for 1992-1993

Programme	Responsible unit existing and (prospective)	
Universal human values and global responsibilities		
1. Governance and conflict resolution	UNU centre	(UNU/CESG, INCORE)
2. Multilateralism and the United Nations system	UNU centre	
3. Culture and development	UNU centre	
New directions for the world economy		
4. Hunger, poverty: the poorest billion	UNU/WIDER	
5. Money, finance and trade - reforms for world development	UNU/WIDER	
6. Other development economics projects	UNU/WIDER	
7. Economics of environment and development	UNU/WIDER	
8. Women in development	UNU/WIDER	
Sustainable global life-support systems		
9. Mountain ecology and sustainable development	UNU centre	
10. Natural resources in Africa	UNU/INRA	
11. Sustainable environment and energy futures	UNU centre, UNU/INRA	
12. Human and policy dimensions of global environmental change	UNU centre	
Advances in science and technology		
13. Implications of new technologies	UNU/INTECH	
14. Biotechnology for Latin America and the Caribbean	UNU/BIOLAC	
15. Microprocessors and informatics	UNU centre	
16. Software technology for developing countries	UNU/IIST	

Programme	Responsible unit existing and (prospective)
Population dynamics and human welfare	
17. Implications of demographic change and urbanization	UNU centre
18. Food and nutrition for human and social development	UNU centre
19. Future global change and modelling	UNU centre

BIOLAC: Programme on Biotechnology for Latin America and the Caribbean (Caracas, Venezuela)

INRA: Institute for Natural Resources in Africa (Accra, Ghana, with a mineral resources unit in Zambia)

IIST: International Institute for Software Technology (Macau)

INTECH: Institute for New Technologies (Maastricht, the Netherlands)

WIDER: World Institute for Development Economics Research (Helsinki, Finland)

CESG: Centre for the Study of Governance (Barcelona, Spain)

INCORE: Joint International Programme on Conflict Resolution and Ethnicity (Ulster, United Kingdom of Great Britain and Northern Ireland)

ANNEX IV

Members of the Council of the United Nations University in 1993

Appointed members

Dr. Lucille MAIR (Jamaica)
Ambassador Extraordinary and Plenipotentiary and Permanent Representative to the United Nations (Chairman of the Council)

Mr. Vladimir DLOUHY (Czech Republic)
Minister, Ministry of Industry and Trade, Czech Republic

Dr. Claude FREJACQUES (France)
Professor and former Chairman, Centre national de la recherche scientifique, France

Professor Josephine GUIDY-WANDJA (Côte d'Ivoire)
Department de mathematiques, Université nationale de Côte d'Ivoire

Ambassador Hideo KAGAMI (Japan)
Former Permanent Representative of Japan to the United Nations

Dr. Sippanondha KETUDAT (Thailand)
Chairman, Petroleum Authority of Thailand

Professor Sang Soo LEE (Republic of Korea)
Professor Emeritus, Korea Advanced Institute of Science and Technology

Professor Madina LY-TALL (Mali)
Ambassador Extraordinary and Plenipotentiary of the Republic of Mali to France

Father Felipe E. MAC GREGOR (Peru)
Chairman, Instituto de la Paz, Universidad del Pacífico, Peru

Dr. Edson MACHADO DE SOUZA (Brazil)
Former Secretary of Science and Technology of the Presidency and Secretary of Higher Education, Brazil

Dr. Abdel Salam MAJALI (Jordan)
Prime Minister, Hashemite Kingdom of Jordan

Professor Lydia MAKHUBU (Swaziland)
Vice-Chancellor and Professor of Chemistry, University of Swaziland

Dr. Vladlen A. MARTYNOV (Russian Federation)
Director, Institute for World Economy and International Relations, Russian Academy of Sciences

Dr. Lucien F. MICHAUD, S.J. (Canada)
Professor, University of Sudbury, Canada

Dr. A. P. MITRA (India)
President, National Academy of Sciences, India

Professor Jacob L. NGU (Cameroon)
Director, Immunology Biotechnology Laboratories, Cameroon

Dr. Luis Manuel PENALVER (Venezuela)
Honorary President, Grupo Universitario Latino-Americano (GULERPE), Venezuela

Dr. Rafael PORTAENCASA (Spain)
Rector, Polytechnical University of Madrid, Spain

Dr. Victor RABINOWITCH (United States of America)
Senior Vice-President, MacArthur Foundation, United States of America

Professor Frances STEWART (United Kingdom of Great Britain and Northern Ireland)
Senior Research Officer, United Kingdom of Great Britain and Northern Ireland

Professor J. A. VAN GINKEL (Netherlands)
Rector Magnificus and Professor of Human Geography, Utrecht University, the Netherlands

Professor Raimo VAYRYNEN (Finland)
The John M. Regan, Jr. Director, The Joan B. Kroc Institute for International Peace Studies, University of Notre Dame, United States of America

Dr. Wang SHAOQI (China)
Director-General, International Cooperation Department, State Science and Technology Commission, China

Rector

Professor Heitor GURGULINO DE SOUZA (Brazil)

Ex-Officio members

Dr. Boutros BOUTROS-GHALI (Egypt)
Secretary-General, United Nations, New York, United States of America

Dr. Federico MAYOR (Spain)
Director-General, United Nations Educational, Scientific and Cultural Organization, Paris, France

Mr. Marcel BOISARD (Switzerland)
Acting Executive Director, United Nations Institute for Training and Research, Geneva, Switzerland

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